

Title (en)  
OPTICAL FIBER

Title (de)  
GLASFASER

Title (fr)  
FIBRE OPTIQUE

Publication  
**EP 4123350 A1 20230125 (EN)**

Application  
**EP 21772149 A 20210316**

Priority  
• JP 2020046648 A 20200317  
• JP 2021010590 W 20210316

Abstract (en)  
An optical fiber includes a core, an inner cladding surrounding the core, and an outer cladding surrounding the inner cladding. A mean relative refractive index difference  $\Delta 1$  of the core with respect to pure silica, a mean relative refractive index difference  $\Delta 2$  of the inner cladding with respect to pure silica, and a mean relative refractive index difference  $\Delta 3$  of the outer cladding with respect to pure silica satisfy a relationship of  $\Delta 1 > \Delta 3 \geq \Delta 2$ . A ratio  $r2/r1$  of an inner cladding radius  $r2$  to a core radius  $r1$  is 4.5 or higher and 5.5 or lower. A minimum value  $\Delta_{min}$  of a relative refractive index difference with respect to pure silica is -0.030% or higher and -0.010% or lower. A radius  $r_{min}$  at which the relative refractive index difference is the minimum value  $\Delta_{min}$  satisfies a relationship of  $r1 < r_{min} < r2$ .  $(\Delta_{min} - \Delta(r1)) / (r_{min} - r1)$  is -0.002%/μm or lower, where  $\Delta(r1)$  denotes the relative refractive index difference with the core radius  $r1$ .

IPC 8 full level  
**G02B 6/036** (2006.01); **G02B 6/028** (2006.01)

CPC (source: EP KR US)  
**G02B 6/028** (2013.01 - KR); **G02B 6/0283** (2013.01 - US); **G02B 6/0285** (2013.01 - EP); **G02B 6/036** (2013.01 - KR);  
**G02B 6/03622** (2013.01 - EP); **G02B 6/03655** (2013.01 - US)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4123350 A1 20230125**; **EP 4123350 A4 20230913**; BR 112022008355 A2 20221018; CN 114641714 A 20220617;  
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